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ABSTRACT

This paper delineates the problems confronting professional personnel in occupational education in attaining the national goal, expressed by Congress, to provide optimum employment for each individual who is able to work. Preparation for occupational proficiency is conceptualized as a continuous process that begins with entry into the school system and continues throughout the individual's career. Curricular experiences are integrated continuously so that the relevance between school and work is readily visible. Thus, traditional dichotomies are obliterated, and the essential continuity of educational experiences is emphasized. The problem of integrating the individual's decision process into the curriculum is a basic step in attaining the national goals. (BH)

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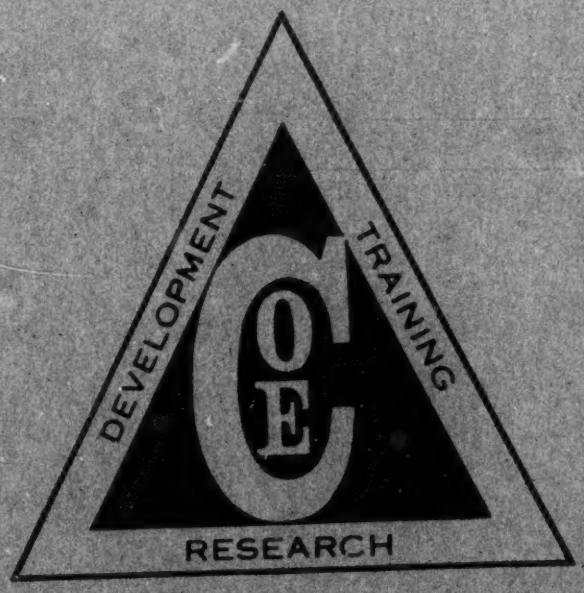

A MODEL FOR EDUCATION FOR OCCUPATIONAL PROFICIENCY

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CENTER FOR OCCUPATIONAL EDUCATION

OCCASIONAL PAPER NO. 6

CENTER FOR OCCUPATIONAL EDUCATION
NORTH CAROLINA STATE UNIVERSITY AT RALEIGH
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OCCASIONAL PAPER NO. 6

1969

CENTER FOR OCCUPATIONAL EDUCATION

North Carolina State University at Raleigh

Raleigh, North Carolina

Project No. BR 7-0348

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PREFACE

This paper was originally prepared for presentation at the National Institute on Design and Modification of Curriculum Materials for Vocational Education, held at Virginia State College in the summer of 1969. The paper was originally entitled "The Curriculum Problem and National Goals," however, it was recognized even at the time of presentation that the model which had been constructed had implications broader than the curriculum problem. The version of the paper presented here differs somewhat from the original in making explicit the broad implications of the original paper.

Although only three authors are shown on the title page of the paper, we would be remiss if we did not recognize the contribution of a large number of people who helped to make this paper possible. The model itself was developed during a seminar at the Center for Occupational Education and the following list presents the names of the persons involved in the seminar and in the development of the model: Mr. W. E. Ballenger, Mr. R. C. Evans, Mr. J. B. Jones, Mr. T. C. Tuttle, Mr. P. S. Vivekananthan, and Mr. R. W. Woodbury.

Prior to publication, this paper was offered for review to the entire professional staff of the Center for Occupational Education. Their suggestions and comments are gratefully acknowledged.

John K. Coster
Director

INTRODUCTION

The purpose of this paper is to delineate the problems confronting professional personnel in occupational education in attaining the national goals set forth by Congress in House Report 1647[1] and Senate Report 1386[2] of the 90th Congress, 2nd Session, and manifested in the Vocational Education Amendments of 1968. These national goals for vocational education, as expressed by Congress, are both explicit and implicit. The explicit goals are stated in the Declaration of Purpose of the Vocational Education Amendments of 1968:

> It is the purpose of this title to authorize Federal grants to States to assist them to maintain, extend, and improve existing programs of vocational education, to develop new programs of vocational education, and to provide part-time employment for youths who need the earnings from such employment to continue their vocational training on a full-time basis, so that persons of all ages in all communities of the State - those in high school, those who have completed or discontinued their formal education and are preparing to enter the labor market, those who have already entered the labor market but need to upgrade their skills or learn new ones, those with special educational handicaps, and those in postsecondary schools - will have ready access to vocational training or retraining which is of high quality, which is realistic in the light of actual or anticipated opportunities for gainful employment, and which is suited to their needs, interests, and ability to benefit from such training.[3]

The implicit goals may be inferred from the reports of Congress. The Senate Report stated that "The immediate motivation for the 1963 Act was the high level of unemployment among untrained and inexperienced youth. Longer term criticism alleged a failure to change occupational emphases in keeping with an increasingly sophisticated technical economy. More dimly recognized,

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[1]U. S., Congress, House, Committee on Education and Labor, Vocational Education Amendments of 1968 (Washington: Government Printing Office, 1968).

[2]U. S., Congress, Senate, Committee on Labor and Public Welfare, Vocational Education Amendments of 1968 (Washington: Government Printing Office, 1968).

[3]Vocational Education Amendments of 1968, Public Law 90-576, Part A, Sec. 101.

but implicit, was the growing need for formal preparation for employment."[4]

The House Report stated "The vocational education legislation that we report today includes many features which will assist our society in that task of becoming a greater and more productive nation."[5]

It seems clear that Congress intends that opportunities for training be provided for all persons who can profit from such training for whom a college education is not appropriate, within the ability of Congress to provide the necessary funds. And, further, it seems clear that Congress intends that this training for subprofessional occupations shall be at a level of quality equivalent to that offered in schools for students who are proceeding towards college. The goals of vocational education which relate to adequate and appropriate preparation for employment are closely related to the national goals of alleviating poverty, minimizing employment, maximizing the productive contribution of each member to society, and maintaining a healthy dynamic economy. The implicit goals, themselves, may be stated in terms of a debt. That is, society owes to each person who is capable of participating in the economic productivity of the nation, an opportunity to obtain the necessary skills and knowledge enabling him to enter into and progress in a career based on the occupational demands of society and the attribute system of the individual.

These explicit and implicit goals should be recognized for what they are, not simply abstract notions, but rather a mandate from society, expressed through the medium of national legislation, which is intended to guide our direction. These goals established a national priority

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[4]Committee on Labor and Public Welfare, op. cit., p. 3.

[5]Committee on Education and Labor, op. cit., p. 3.

which all of us in occupational education should recognize and keep firmly in mind in our contemplation of the national problem.

The goals of contemporary programs of occupational education are the product of a series of developments. The process of this development began in this decade with the report of the Panel of Consultants on Vocational Education,[6] subsequently manifested in the Vocational Education Act of 1963, reexamined by the Advisory Council on Vocational Education,[7] subsequently redefined in the House and Senate Reports, and remanifested in the Vocational Education Amendments of 1968.

One of the most significant changes incorporated in the Vocational Education Amendments of 1968 is the expansion of the concept of vocational education to occupational education. Occupational education is mentioned initially in the Act in Part D, (Exemplary Programs and Projects), and, if the Senate Report is considered, relates to the development and introduction of appropriate programs at the junior high school level designed to acquaint preadolescents with occupational opportunity and the world of work. The House Report presented a more direct statement which has revelance to the delineation of the problem facing occupational educators:

> . . . The General Subcommittee on Education has concluded that the following five ideas recommended by the Advisory Council (on Vocational Education) deserve serious consideration: (1) any dichotomy between academic education and vocational education is outmoded; (2) developing attitudes, basic educational skills and habits are as important as skill

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[6]Panel of Consultants on Vocational Education, Education for a Changing World of Work (Washington: Government Printing Office, 1963).

[7]U. S., Congress, Senate, Subcommittee on Education of the Committee on Labor and Public Welfare, Notes and Working Papers Concerning the Administration of Programs Authorized Under Vocational Education Act of 1963, Public Law 88-210 as Amended (Washington: Government Printing Office, 1968). Parts of this report were later published as General Report of the Advisory Committee on Vocational Education. Vocational Education: The Bridge Between Man and His Work.

> training; (3) prevocational orientation is necessary to introduce pupils to the world of work and provide motivation; (4) meaningful career choices are a legitimate concern of vocational education; (5) vocational programs should be developmental, not terminal, providing maximum options for students to go on to college, pursue postsecondary vocational and technical training, or find employment.[8]

The Center for Occupational Education at North Carolina State University has formulated an even broader definition of occupational education:

> Occupational education encompasses educational programs at elementary, junior high, senior high and postsecondary levels designed to assist each person in becoming familiar with and exploring the world of work; and in selecting, preparing for, entering into, and becoming adjusted to a career pattern consistent with his attributes and with occupational demands of society. Occupational education, therefore, includes educational programs specifically designed to prepare the individual for initial entry into a career, for continued progress in his career, and for changing to new careers. In addition, occupational education includes programs designed to expand occupational horizons, develop attitudes and work habits, provide for exploration of the world of work, and provide information on which the individual can act in making career choices in light of alternatives available to him. Further, occupational education provides for the articulation of experiences from elementary schooling through junior and senior high school levels to postsecondary and adult programs; for the articulation between career choice and preparation for employment; for the articulation between school and work; and for the articulation between general and occupational education.

Thus, the scope of this paper goes beyond Part I of the Vocational Education Amendments of 1968, "Curriculum Development in Vocational and Technical Education," and anticipates the eventual authorization and appropriation of funds to support occupational education programs in elementary and secondary schools for which funds are authorized in Part D of the Act, "Exemplary Programs and Projects," to develop new models of occupational education directed toward broadening the horizon of elementary

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[8]Committee on Education and Labor, op. cit., pp. 2-3

and secondary school students and acquainting them with the broad range of occupations in which they eventually may enter.

A MODEL FOR EDUCATION FOR OCCUPATIONAL PROFICIENCY

In order to attack the problems in occupational education in relation to national goals, we have developed a model for education for occupational proficiency. This model has been designed to serve as an initial step in translating national goals relative to occupational education into reality. The model is presented as a preliminary report. Refinement is required prior to its implementation. Not only is work required for the implementation for the model, but also work is required in order to determine the strategies through which the model may be introduced into local educational agencies.

The generic basis of the model is the concerns expressed by Congress for fuller and more complete attention to the needs, interests, and abilities of the individual in the development and implementation of expanded programs of occupational education. The model goes beyond that which has traditionally been considered vocational and technical education, although vocational and technical education as it has been operated in the public school system is an essential element of the model. The model considers the totality of preparation for employment within the school system. It is termed "a model for education for occupational proficiency" in that it is based on the assumption that most if not all education, that is, most if not all curricular experiences provided under the direction of the school, are or should be relevant to preparation for gainful employment. Where the individual receives specific education for employment may be a function of time and place. It may occur in the secondary schools, in the postsecondary schools, in colleges and universities, or in adult classes. The model does not deny that much preparation

for occupational proficiency is provided outside the school system; however, this model is restricted to the school system.

The model is depicted schematically in Figure 1. Figure 1 essentially consists of two systems--the school system and the occupational structure or work system. The occupational structure system overlaps the school system to denote that persons may be in school and working simultaneously. the input into the model is the individual, and he enters the model concomitant with his entrance into the school system. The model shows that the entrant is conditioned by the social familial value system which provides his background and the basis of the individual attributes system which must be modified through the school system.

The school system is subdivided into four levels. The lower grades are analagous to elementary school, the middle grades are analagous to junior high school, and the upper grades which are analagous to senior high school. The higher, postsecondary, and adult education are beyond or external to the three lower levels. The broken lines which separate each of the levels are intended to denote a high degree of flexibility and articulation between and among the several levels of the school system. No level is considered terminal.

To function effectively, the school system must retain the individual to that point in time at which he can leave the school system and enter employment with maximum benefit to himself and the highest possible degree of productivity to the social and economic structure of society. Within the occupational structure or work system the block labeled "labor force" represents the number of persons available for employment at any given point

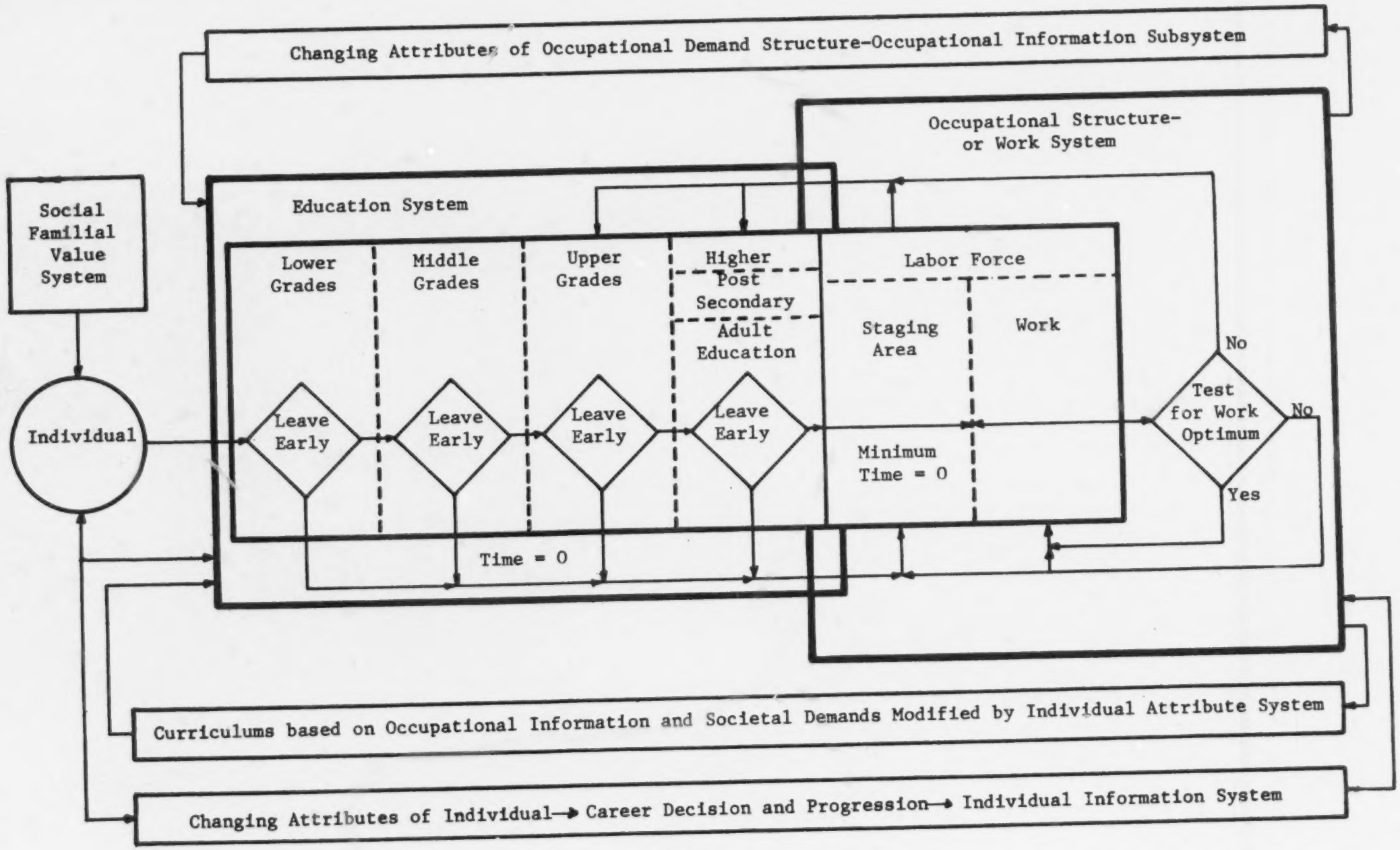

FIGURE 1

A MODEL FOR EDUCATION FOR OCCUPATIONAL PROFICIENCY

in time. The labor force may be thought of as a staging area into which the product of the school system is placed prior to obtaining employment in the world of work, as well as the component of the population that is working. The individual who completes the system, including higher education or postsecondary schools, enters the labor force upon the completion of his formal education. Decision points are placed on the lower base line of the school system to denote that the individual may decide to leave the system prior to completion of a public school education program. Once the individual decides to leave the system, he or she immediately enters in the labor force, except in special conditions such as illness, induction into armed forces, or, in the case of girls, pregnancy. Technically, the model does not distinguish among individuals who leave the school system at the completion of high school or who enroll and drop out of a higher education or postsecondary program, and individuals who leave school prior to completion of high school.

The model is highly individualistic, and some students who have had access to high quality vocational training in the upper grades may have the necessary skills for entrance into the labor force or into an apprentice program. Some individuals may terminate their educational program before completing higher education or postsecondary school programs and have adequate skill development for entry into employment. Other individuals may have completed high school, enrolled in higher education, left higher education before completion, and entered the labor force without having developed skills which will enable them to enter into employment

at a level commensurate with their attribute systems. Youths who leave school prior to acquiring salable skills enter the labor force without marketable skills with a disadvantage both to themselves and to the social and economic structure of society. One of the fundamental problems that confronts curriculum planning in occupational education is that of re-structuring the school system to maximize the holding power of the school in order to ensure that each individual leave school with a salable skill.

Let us now examine more closely the occupational structure or work system of the model for education for occupational proficiency. Two essential elements are provided in the system. One relates to the goal of the total system to provide each individual with the opportunity for employment at a level of optimum advantage to himself and to society, in light of the attribute system of the individual. The second relates to the continuous process by which the individual may be recycled from the labor force to the school system so that he can recieve training essential for employment at the optimum level of his capacity. To function effectively, therefore, the system must provide for the possibility and opportunity for individuals to leave the school system, enter the labor force, and reenter the school system on either a full-time or part-time basis. We have indicated through our flow lines that the reentry may be either at the upper grades or at the postsecondary or adult programs. Again, the principles to be applied are that <u>no educational program is terminal nor is any decision to leave the system irrevocable</u>.

We have introduced into this model a somewhat complicated decision box which suggests that under ideal and optimum conditions, consistent with

practice and the changing attributes of the individual and the changing attributes of the occupational demand system, the individual may consciously or subconsciously test his employment for its quality of optimality. If the individual decides at any point in time that he is functioning at an optimum level of satisfaction to himself then this decision is denoted by "yes" and is reflected in the flow line back to work. The individual, hence, has questioned his status, decided it is satisfactory, and continued in his present place of employment. If the answer is "no," that is, the individual is not working at optimum level of performance or satisfaction, then he has a number of alternatives. He may continue at his job, even though it is not optimum, he may obtain a different job, or he may decide to leave work entirely and immediately recycle himself into the school system. Another alternative is to continue in work but to reenter the school system on a part-time bases to get additional training which may lead to reentrance into the labor market, or to recycling through the optimum decision block. All of these alternatives are connoted by the "no" routes from the decision block.

The model for education for occupational proficiency makes explicit three elements which are essential to optimizing employment. These elements are set into the model to encompass both the school system and the occupational structure or work system. The first is the changing attributes of the individual, leading to career decision and progression, and manifested as the individual information system. This element is shown as an input into both the school and the work systems to denote that attributes are constantly modified, decisions are made at diverse points in time, and that the individual

is acting on his own in relation to the decision points to continue education, enter into employment, or recycle through the school system. This element is the point of primary concern of the occupational counseling and guidance subsystem in the school which must function effectively if the goal of optimum employment is to be realized.

The second element is labeled "curriculums based on occupational information and societal demands modified by the individual attribute system." This element is embedded into the school system, but derives its content from the occupational structure. The flow diagram, therefore, illustrates this element as emerging from the occupational structure and acting as an input into the school system. Curricular experiences are considered modular, and are constructed to facilitate the attainment of specific behavioral objectives at any given point in time in light of the individuals goal system and consistent with his attributes and the occupational demands of society. If we hold the position that the dichotomy between general or academic programs and vocational, technical, or occupational education programs must be obliterated then our basic concern is that the curricular experiences are appropriate in terms of eventually maximizing or optimizing the potential for employment of the individual and that they must provide for the desired combination of basic skills, scientific and technical training, development of attitudes and habits, provisions for decision making, and prerequisites for occupational preparation in higher and postsecondary institutions. The construction of curricular modules and the introduction of these modules into the school system are the responsibility of curriculum developers in occupational education.

But this responsibility is assigned to occupational education because of the expertise required for effective development of these modules and not to connote a dichotomy between the educational objectives related to preparing persons for employment and other educational objectives. Divisiveness in the school system is a luxury which cannot be tolerated if the national goals outlined earlier in this paper are to be realized.

The third element in the model is the changing attributes of occupational demand structure which includes the occupational information subsystem. This element is derived from the occupational structure and work system and implemented by the school system. Specifically, it routes the dynamic characteristics of the world of work and the constant changes that are taking place in the structure of occupations directly into the school system. In terms of the curriculum problem, the changing attributes of occupational demand structure dictate that new curriculums must constantly be developed and inserted into the school system if the school system is to be an effective agent in preparation of individuals for the contemporary world of work.

The model for education for occupational proficiency is based on the assumption that the optimum level of employment of the individual is conditioned by and derived from a set of experiences which are pervasive throughout the entire school system. These experiences are to be integrated with the total curriculum available to or designed for the individual. Emphases differ according to the level of maturity of the individual and the grade level in which he is placed. The emphases are depicted in Figure 2, which is denoted as the occupational education emphases in the curriculum. In the lower grades, the major emphases is placed on the

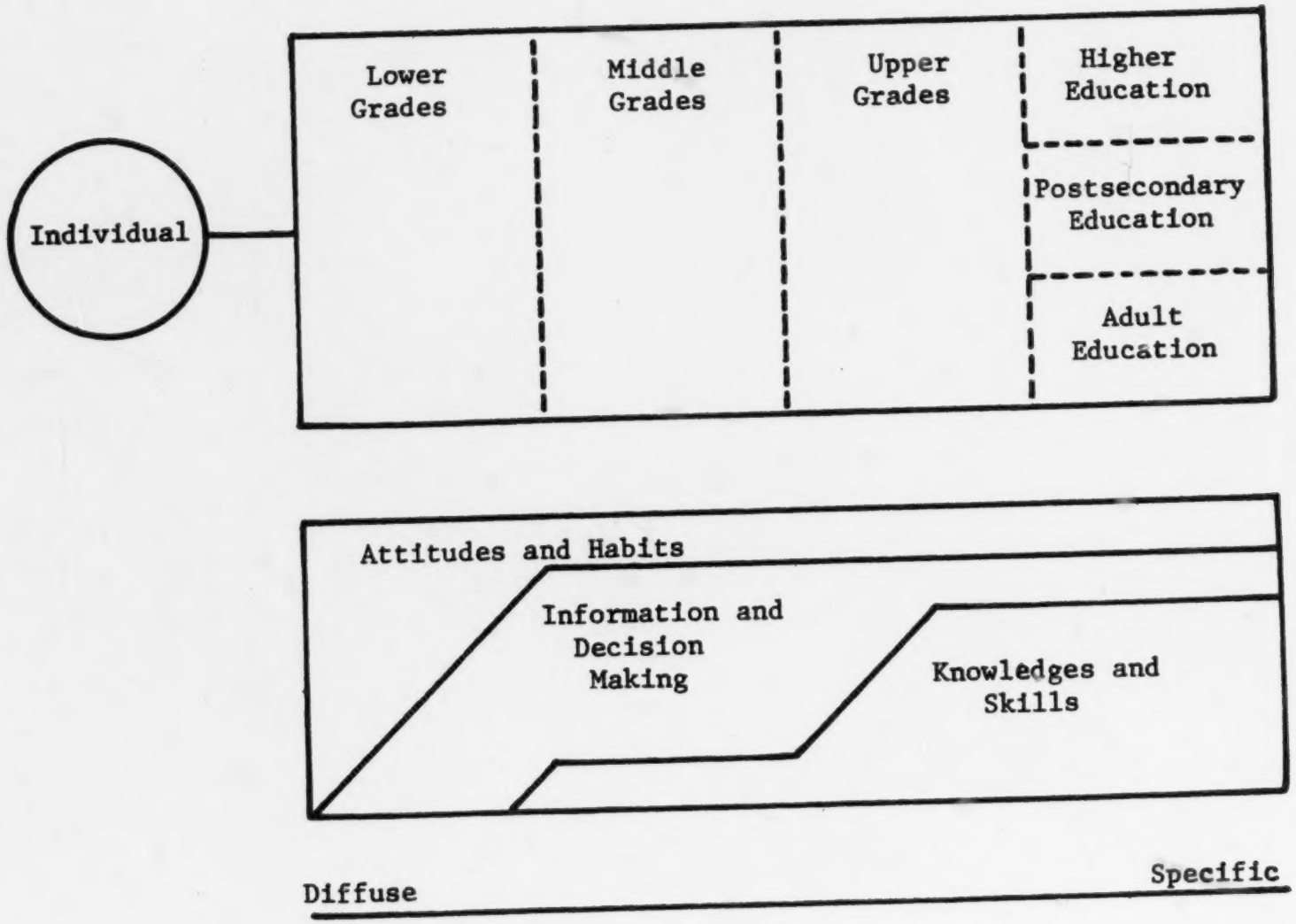

FIGURE 2

CURRICULAR EMPHASES IN OCCUPATIONAL EDUCATION

development of attitudes and habits with concomitant emphasis placed on expanding horizons and providing information regarding the world of work. The development of attitudes and habits continues throughout the school system and the educational career. In the middle grades, the emphasis is placed upon information and decision-making. Here there is concern for both access to information and knowledge of alternatives which are available to the individual. Orientation to work is an essential element to the information system. The information continues throughout the remainder of the school system and the educational program. At the upper grades and in the higher, postsecondary and adult levels, major emphasis is placed on the acquisition of knowledge and skills which will enable the individual to perform effectively in an entry level occupation and to continue progress in his career at his optimum level of employment at any given point in time.

a continuum ranging from the diffuse to the specific is indicated along the base line of the model. This model denotes that at the early grade levels occupational education would be integrated with the total curriculum or curriculums for the individual. At the middle grade levels, the occupational education elements in the curriculum would be partially integrated with the total curriculum with special interest on relating curricular experiences to potentials for employment or further education, and with specific experiences provided which relate to the information and decision process. In the upper grades and in the higher education, postsecondary, and adult education programs, occupational education is more specific, and provides for curricular experiences designed to prepare persons for initial entry into the world of work or for continuous training through the recycling process.

A DECISION MAKING MODEL

Underlying the problem of attaining the national goal of optimizing employment is the structuring of an articulated school system which provides for (1) continuity from the lower to middle to upper grades to higher education or to postsecondary occupational education institutions, and (2) easy access to the system once a decision has been reached to leave school and enter the labor force or once dissatisfaction with current employment leads to the decision to obtain additional schooling. Accessibility to the system implies that the system provide for appropriate curricular experiences that are based on occupational demands, realistic in light of the level of maturity of the individual, and relevant to the level of performance required of the individual in the occupation or career in which he plans to enter and progress. Thus one dimension of the problem in relation to national goals is that of providing curriculums which will ensure the attainment of appropriate objectives at any given point in time. This dimension has received much attention, and was given further impetus in Part I of the Vocational Education Amendments of 1968, and it was to this dimension that the previous section of the paper was specifically addressed.

A second dimension of the problem relates to the conceptualization of the individual as a rational being who can act effectively on information available to him, evaluate alternatives, and reach a satisfying decision with maximum rewards. This dimension has not received the attention it deserves.

The model for education for occupational proficiency which was presented in the preceeding section of the paper includes a number of

decision points throughout the individual's school-work career which are critical if the national goal of optimum employment for each individual is to be reached. This section of the paper presents an individual model for rational occupational decision making, which is shown in Figure 3. The model has been validated in other decision making processes,[9] and has been adapted to the decision process that the rational being makes in preparation for occupational proficiency, as indicated in the model for education for occupational proficiency. The bases for the presentation of the model is the contention that curricular offerings which are developed and introduced into the school system have limited value unless rational decisions which lead to access to an occupation or career and to the curricular experiences appropriate for such occupation or career are made. Thus, a product of the curriculum is a rational decision maker, i.e., one who is capable of choosing between alternatives in attempting to maximize his rewards.[10]

The individual model for rational occupational decision making includes six structural components:

1. The individual.
2. The dynamic individual and societal-familial value system.
3. The dynamic occupational information about one's self and the labor market or occupational structure.

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[9]Edwards, Ward, "Subjective Probabilities Inferred from Decisions," Psychological Review, 69:102-135, 1962. The decision-making process discussed in this paper is an adaptation of the Subjective Expected Utility Model developed by Edwards. For a more advanced treatment of underlying mathematical principles, see W. Edwards, H. Lindman, and L. J. Savage, "Bayesian Statistical Inference for Psychological Research, "Psychological Review, 70: 193-241, May, 1963.

[10]Shubik, Martin, ed., Game Theory and Related Approachers to Social Behavior (New York: John Wiley and Sons, 1964), pp. 3-77.

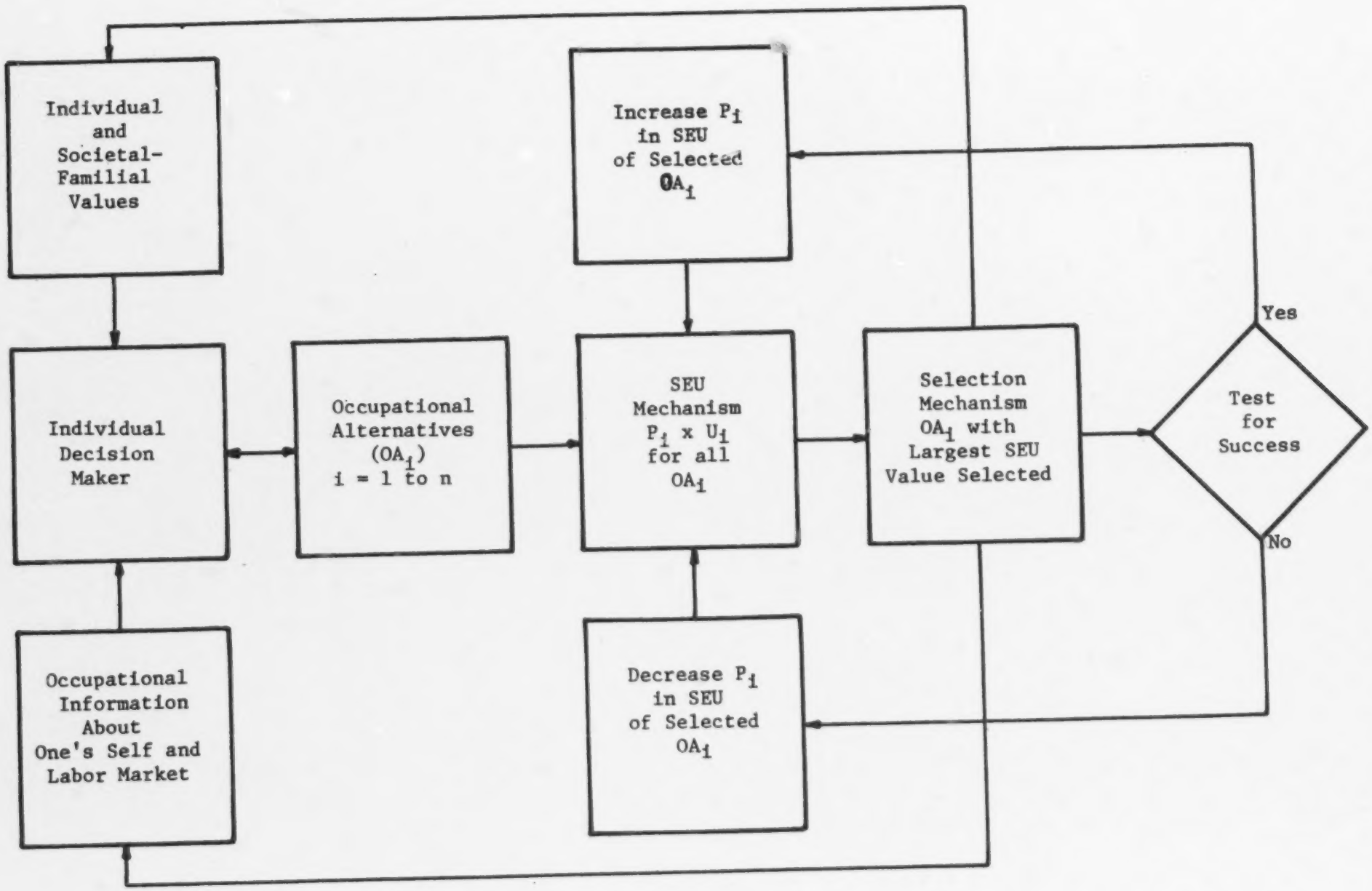
Individual and Societal-Familial Values
Individual Decision Maker
Occupational Information About One's Self and Labor Market
Occupational Alternatives (OA_i) i = 1 to n
SEU Mechanism $P_i \times U_i$ for all OA_i
Increase P_i in SEU of Selected OA_i
Decrease P_i in SEU of Selected OA_i
Selection Mechanism OA_i with Largest SEU Value Selected
Test for Success
Yes
No

FIGURE 3

AN INDIVIDUAL MODEL FOR RATIONAL OCCUPATIONAL DECISION-MAKING

4. The occupational alternatives considered by the individual at any point in time, denoted by OA_i, with i going from one to n, and with n representing the number of alternatives.

5. The probability of success and the utility of a given occupational alternative, denoted by P_i and U_i for each OA_i, with attendant values assigned to each P_i and $U_i$based on a subjective expected utility (SEU) mechanism.

6. A mechanism for the selection of the alternative with the largest subjective expected utility value.

An additional component of the system that is not considered structural is a decision point at which the individual decides whether he is successful in attaining and maintaining a selected occupational alternative OA_i.

Let us now demonstrate the relationships between the component parts of our model. The individual and societal values are dynamic and change over time as does occupational information about one's self and the labor market. Likewise, the occupational alternatives may change over time; that is, certain occupations may cease to exist and other new occupations may come into existence.

The key to the decision making model is the concept of subjective expected utility (SEU), which is based on work done by Edwards.[11] This concept was derived from a previously developed concept of "expected value," which was simply the product of the objective probability of success and the objective money payoff. This value predicts the mean dollars and cents payoff on a bet. The rational man, which must be produced by the school-work system, however, does not always have access to objective information about either the probability or the payoff. The subjective expected utility

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[11]Edwards, op. cit.

model was developed (by Edwards) to facilitate the realization of a maximum value payoff when the decision maker does not have the requisite objective information.

For each occupational alternative in the model (OA_i), two subjectively derived values are assigned in accordance with the SEU model, both of which run from 0 to 1. One value is for the subjectively evaluated probability of success. The second value is the utility of a given alternative. The SEU mechanism assigns values to each of the occupational alternatives by subjectively producing a value expressed as the sum of rewards associated with that given alternative (e.g., money, status, security) minus the sum of the costs (e.g., time, effort, money), which constitute the utility value, and ranges form 0 to 1. Probability of success is simply the subjective estimate of the individual's probability of successfully pursuing a specific occupational alternative at any given point in time. Thus the subjective value of any given occupational alternative at any decision point in Figure 1 is the product of the probability of success and the utility value. Hence $OA_i = P_iU_i$. The individual may influence the number of alternatives available to him by setting either the probability of success or the utility at zero, thus yielding a zero subjective expected utility value.

The "rational man" then, according to Edwards, would select the alternative with the highest subjective expected utility value. Selection as used in the model means that one would either accept a job or begin training for that job with the largest SEU value, if a rational decision were made. At points in time the individual would then evaluate subjectively whether he was successful in his chosen alternative or successfully training for the chosen alternative. If he determined that he was successfully training or successfully participating in that chosen occupational alternative, the probability of success associated with that alternative would increase. Conversely, if the evaluation indicated that he was not proceeding toward or participating in that occupation at a successful level, than the probability of that alternative would decrease. After each evaluation the rational man would then reassign values to the probability of the chosen alternative, compare that subjective expected utility value computed with the new probability to the other occupational alternatives, then select the one with the highest value. While the subjective expected utility values may change internally by experience, they may also change externally by changes in the labor market, individual potential, and individual and/or societal values. Changes from these sources may affect either the utility, the probability, or both, of given occupational alternatives. Hence we have here a model of the rational man in a dynamic decision situation.

If we accept the proposition that the development of a rational decision maker is one of the major goals of education, we must be prepared to accept a number of concomitant implications for curriculum development. First, and most obviously, we must provide the individual with practice in making

"rational decisions," and practice in problem solving.

Next, we must provide the individual with information about his potential in various occupations. This calls for the development of new tests of aptitude and ability, and the funneling of the results of these tests back to the student. It is necessary for the student to have ready access to the results of his tests in order that he may have the best information available with which to assess his own probability of success.

On another level of information, we must provide the individual with a working knowledge of the state of the labor market, and our best judgment of its projected state at the time he will be entering. His knowledge of the needs, and projected needs, of his society should help him in his decision-making process. In order to provide this information we must be prepared to draw on other fields, and to ask them to refine their techniques for prediction. We must also be able to provide information about the relationships between occupations, to provide for the contingency that our initial predictions of the labor market were wrong. That is, if an individual's chosen occupation is closed to him, either by reason of a glut in the labor market, or the outright disappearance of his occupation through technological advance, he must know what other occupations he might enter with minimal retraining. In addition, the individual must have information about the non-monetary rewards of occupations, since these too enter into the utility of the alternatives.

Finally, we must strive to reduce the costs to be incurred by each person for alternative curriculums leading to occupations or careers, in order to maximize the utility of the selected alternative. This point argues

for the selection of curricular modules and curriculum materials which will not only be effective in terms of attaining objectives, but will also be efficient in terms of costs, including the foregone earnings of the individual.

SUMMARY AND IMPLICATIONS

The problems in relation to attaining national goals for an expanded concept of occupational education has been treated in this paper as a function of an integrated process which articulates (1) the individual with the school system and its several levels, and with the occupational structure or work system, (2) the school system and the work system, and (3) the decision process with the action components - that is, the alternatives for school or work that must be provided to the individual at any given point in time if optimum employment is to be realized. Preparation for occupational proficiency is conceptualized as a continuous process that begins with the introduction of the individual into the school system and continues throughout the individual's school-work career. Curricular experiences are integrated also at any point of time so that the relevance between school and work is readily visible and recognizable. Thus, traditional dichotomies are obliterated and the essential continuity of educative experiences are emphasized.

The national goal for occupational education is optimum employment for each individual who is capable of participating in the occupational structure of society. The national goal is realized through two basic entities. First, the national goal is realized through the product of the decision process each individual takes at diverse points in time through his school-work career. Second, the national goal is realized through providing appropriate curricular alternatives which permit a real choice to the decision maker.

It has been tacitly contended throughout this paper that these two entities have been separated in actual practice, if not in theory. But when the model for education for occupational proficiency is examined in light of the essential continuity of the school-work career, decision making can no longer be treated as a side show. It must be brought into the main tent, and integrated into the total program. How this is to be done is largely an unresolved issue; it is our contention that the problem of integrating the continuous decision process into the curriculum is a basic problem in attaining the national goals set forth by Congress.

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